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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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EXAMINER
PADGETT, MARIANNE L

ART UNIT	PAPER NUMBER
1762	10

DATE MAILED: 11/06/2002

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.	Applicant(s)
09/817,757	Mashl et al
Examiner	**Group Art Unit**
M.L. Padgett	1762

—The MAILING DATE of this communication appears on the cover sheet beneath the correspondence address—

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, such period shall, by default, expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

☒ Responsive to communication(s) filed on 8/7/02 + 8/15/02.

☐ This action is **FINAL.**

☐ Since this application is in condition for allowance except for formal matters, **prosecution as to the merits is closed** in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 1 1; 453 O.G. 213.

Disposition of Claims

☒ Claim(s) 1-21 is/are pending in the application.

Of the above claim(s) 6-8, 18 + 20 is/are withdrawn from consideration.

☐ Claim(s) _____ is/are allowed.

☒ Claim(s) 1-5, 9-17, 19 + 21 is/are rejected.

☐ Claim(s) _____ is/are objected to.

☐ Claim(s) _____ are subject to restriction or election requirement

Application Papers

☐ The proposed drawing correction, filed on _____ is ☐ approved ☐ disapproved.

☐ The drawing(s) filed on _____ is/are objected to by the Examiner

☐ The specification is objected to by the Examiner.

☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. § 119 (a)-(d)

☐ Acknowledgement is made of a claim for foreign priority under 35 U.S.C. § 119 (a)-(d).

☐ All ☐ Some* ☐ None of the:

☐ Certified copies of the priority documents have been received.

☐ Certified copies of the priority documents have been received in Application No. _____.

☐ Copies of the certified copies of the priority documents have been received in this national stage application from the International Bureau (PCT Rule 17.2(a))

*Certified copies not received: _____.

Attachment(s)

☒ Information Disclosure Statement(s), PTO-1449, Paper No(s). 2, 5

☒ Interview Summary, PTO-413 Paper # 9

☐ Notice of Reference(s) Cited, PTO-892

☐ Notice of Informal Patent Application, PTO-152

☐ Notice of Draftsperson's Patent Drawing Review, PTO-948

☐ Other _____

Office Action Summary

1. Applicant's election without traverse of group I, methods claims, species of spraying (claims 1-6, 9-17, 19 and 21 in Paper No. 8 and 9 is acknowledged.

2. Claims 1-6, 9-17, 19 and 21 are objected to or rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

In claims 3-4, it is unclear from where the core and the capsule are being removed. The core as claimed is implied to be within the capsule, but this composite object have never been claimed to be put anywhere, so it is unknown what action these claims are intended to represent and can not be usefully further treated with respect to prior art.

Use of relative terms, that lack clear metes and bounds in the claims, or lack a clear definition in the specification or cited relevant prior art, are vague and indefinite. The requirement of "corrosion" and/or "erosion" resistant is relative, because many different conditions may cause these effect, but they will vary depending on both the object intended to resist, and what it is resistant to, i.e. a material that is corroded by one acid, maybe unaffected by another, while a second material may be opposite by effected, etc. Therefore, without definition of the conditions or environment intended to be resisted, neither "corrosion" and/or "erosion resistant have clear meaning.

In claim 6, "high" is also a relative term, and "a spraying technique" is objected to for using the wrong article for a limitation introduced in claim 5, from which claim 6 depends. In claim 10 "a metal-base alloy" is objected to for analogous antecedent basis problems.

In claim 14 "hot" is a relative term, although it is defined in/by its dependent claims15-17 (but not 14). Note hot in claim 19 is also defined by the temperature range given.

In claim 21, last line "the fabricated component" has no antecedent basis in the steps of the claim. Although t may be said to refer to he preamble, but this does not provide any necessary or positive relationship with the core or first and second materials or the results of their processing.

3. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

4. Claims 1-2, 11-12, 14-15 and 21 are rejected under 35 U.S.C. 102(b) as anticipated by or, in the alternative, under 35 U.S.C. 103(a) as obvious over Becker et al (955).

Claims 5, 9-10 13 and 16-17 are rejected under 35 U.S.C. 103(a) as being unpatentable over Becker et al (955).

In Becker et al (955), see the claims; the abstract; col. 2, line 65-col. 3, line 2 and lines 53-66, for a body (may be stainless steel) whose cavities are plated with Ni, then the plated surfaces are enclosed using a metal structure (may also be stainless steel) and resulting enclosure is filled with metal powder which also may be stainless steel or maybe other alloys. The powder is bonded to the Ni-plated body via hot isostatic pressing, where conditions are given to include temperatures of approximately 2100°F, pressure of approximately 15,000 psi for time of

approximately 2 hours or for several hours. The resultant product is then machined to remove the metal structure used to hold the powder to the plated substrate body and create the desired dimensions. This removing step may be related to what applicants intended in claims3-4, but is not clear from the claim language.

Becker et al's process maybe considered to read on "substantially enclosing the first material with in a capsule", because the hollow metal sealing structure (stainless steel can) is used to enclose the Ni-plated surface, thus the first material is encapsulated, however the substrate vessel that is plated is not within the hollow structure, however while the claim language might suggest the core should be, it is not required to be with in the capsule, and in Becker et al can be considered to be part of the capsule for the claims as written, or as the enclosing by the capsule is only "substantially", the use of another surface, i.e. the substrate body or vessel, to complete the encapsulation, is consistent with the claim language.

While Becker et al teach Ni-plating in preparation for the hot-isostatic pressing procedure, they do not discuss what technique is used to cause the plating, however this generic teaching suggest that any conventional plating process would be appropriate, thus including old and well known procedures such as chemical plating solutions or various physical or vapor deposition processes as obvious plating techniques due to their conventional usage. The Ni-plating makes the first material a metal, but does not specify alloy, however the taught Ni-plating may be inclusive of Ni-alloys, hence it would have been obvious one of ordinary skill in the art to employ either pure or alloyed Ni for the taught plating.

Becker et al teach use of high strength alloy steel for their pressure containing structures, and exemplifies use of stainless steel therefore, and where the body being treated is further

exemplified by various grades of alloy steel including carbon steel, therefore it would have been obvious that the rest of the powder containing steel structure could also have been carbon steel, as it has already been taught for use as part of the structure (equivalent to the core) that is used in the isostatic pressing while containing the powder.

The exemplary time for isostatic pressing is "for several hours" which clearly includes 2 hours, but is an indefinite number more than one, but less than many, hence it would have been obvious to do the pressing for ranges of hours including values not explicitly taught, such as 3 or 4 or 5, as the teachings of Becker are suggestive of such times.

The discussion of "substantially enclosing...capsule" as discussed above, may also be alternatively considered as a 103 instead of a 102, if one does not consider the composite of the substrate (core, vessel, body) + the hollow metal tube which form the enclosure to be the capsule, or if one considers that the plated body takes up too much of the enclosing structure for the 1st material to be "substantially...within the capsule" if one considers the substrate not to be part of the capsule. In such cases, it would have been obvious to one of ordinary skill in the art that Becker et al's process is specialized for treating the insides of hollow objects, but that the overall elements of the process may be more generically applied to other shapes, as long as the metal structure holding the powder in place is suitably shaped to the substrate. Hence, to coat the outside of steel objects one would place the taught enclosure around the outside.

Note the same parameters and process applied to the same materials will inherently produce the same kind bonding.

5. The patent to McCollough et al has teaching similar to Becker et al, but without the initial preparatory Ni-plating.

6. Claims 6 and 19 are rejected under 35 U.S.C. 103(a) as being unpatentable over Becker et al as applied to claims 1-2, 5, 9-17 and 21 above, and further in view of Arnold (978 or 845).

Becker et al as discussed above does not provide any specific technique for the preparatory Ni-plating, however the Arnold references show that thermal spraying (or plasma spraying) processes that use powders, may be used to supply a coating that may include Ni-alloys, for a hot isostatic pressing procedure. In Arnold (845), see the abstract ; figures, esp. 1 & 4, steps 5-6; col. 4, lines 41-67+; col. 9, lies 17-30; col. 10, lines 42-68; col. 11, lines 47-65 and col. 13, lines 1-24 and table 1 in col. 14; and in Arnold (978), see the abstract; figures, esp. 1(b) and 4, steps 5-6; col.7, lines 62-col.8, line 65; col. 9, lines25-60; col. 10, line 59- col. 11, line 5 and lines 50-56; col. 15, lines 40-45 and table 1 in col. 6. It would therefore have been obvious to one of ordinary skill in the art that since the Arnold references show that thermal spraying procedure maybe used to apply Ni-alloy coating that are then hot isostaticly pressed, that the Ni-plating in preparation for like treatment, would have been effectively applied by such a spray process with specific spray application conditions of Arnold being applied to the generic plating teaching of Becker et al.

7. The patent to Eaton is analogous to the Arnold references for teaching a spray coating process (plasma spraying) used in a procedure that then applies hot isostatic pressing.

8. Any inquiry concerning this communication or earlier communications from the examiner should be directed to M. L. Padgett whose telephone number is 6. The examiner can normally be reached on Monday-Friday from about 8:00 am-4:30 pm.

The fax phone numbers for the organization where this application or proceeding is assigned are 703 872-9310 for regular communications and 703-872-9311 for After Final communications and 703-305-6078 for unofficial communications.

Examiner Padgett/ng
~~November 5~~, 2002
October 21,
November 5, 2002

MARIANNE PADGETT
PRIMARY EXAMINER